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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,419	01/28/2004	Edward L. Sinofsky	3565.1000-000	2912

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EXAMINER	
REHM, ADAM C	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,419	SINOFSKY, EDWARD L.	
	Examiner	Art Unit	
	Adam C. Rehm	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/6/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group 1 in the reply filed on 12/7/2005 is acknowledged.

Specification

2. The use of the trademark "Plexiglass" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "critical angle" in Claim 19 and "reduced loss" in claim 44 are relative terms which render the claims indefinite. The terms are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

4. Claim 44 recites the limitation "the sleeve" in Line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 17, 18, 20, 22, 23, 26, 40, 41 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by ZOU ET AL. (US 6,186,649), which discloses a flat/linear panel luminaire apparatus/system (300, Fig. 9) having:

- A cold-cathode fluorescent light source/chemiluminescent reaction (252, Fig. 8, Column 14, Line 62);
- A transparent, acrylic/dielectric insulating sleeve surrounding the light source (256, Column 8, Lines 40-43);
- A planar waveguide having an edge in contact with the sleeve and receiving light through [a gap in] the sleeve, the planar waveguide emitting the received light through a planar surface and self-contained (316, Fig. 9; Column 9, Lines 48-54); and
- A reflector surrounding a substantial portion of the sleeve and directing light into one edge of the guide (258 illustrates a reflector surrounding the inside surface of sleeve 256) with the reflector made of a specular/porous thin polymer film or PTFE sheet (Column 5, Line 51-Column 6, Line 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 5, 8, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of ATO (US 6,935,766). ZOU ET AL. discloses the claimed invention as cited above, but does not specifically disclose an adhesive or friction connector for coupling said reflector/insulating sleeve to the waveguide. However, ATO teaches a double-sided adhesive tape for coupling a reflector and light guide (Column 4, Lines 56-59). It would have been obvious to one of ordinary skill in the art at the time of invention to modify ZOU ET AL. and use the adhesive tape as taught by ATO in order to couple the reflector/insulating sleeve (as a unit) and the light guide.

7. Claims 6, 7, 29, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of ATO (US 6,935,766) as applied above to Claims 4, 5, 8, 27 and 28. ZOU ET AL. and ATO disclose the claimed invention as cited above including an adhesive tape for coupling a reflector to a light guide (ATO, Column 4, Lines 56-59), but do not specifically disclose a type of tape. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use segmented metalized, vinyl or polyester tape, since it

has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Moreover, Applicant has not disclosed that a specific tape solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the adhesive tape disclosed in ATO. Even further, metalized tape, which requires segmentation for use, in addition to vinyl and polyester tapes are commonly used and easily assessable. It would have been obvious to one of ordinary skill in the art at the time of invention to use a common and readily assessable tape in ATO.

8. Claims 9, 10, 14, 15, 32, 33, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) as applied to claims 1 and 22 and further in view of MURASE ET AL. (US 5,408,387). ZOU ET AL. discloses the claimed invention, but does not specifically disclose a back panel/thin polymer film specular reflector sheet for the purpose of limiting pass through light emissions. However, MURASE teaches a thin polymer film back panel (2, Column 3, Line 20) having ink dots (20) that increase in percentage correspondingly to increased distance from a light source for the purpose reflecting light uniformly (Column 3, Lines 35-43). It would have been obvious to one of ordinary skill in the art at the time of invention to modify ZOU ET AL. and use the back panel and ink dots as taught by MURASE in order to provide a more efficient edge-lit light guide.

9. Claims 11 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649). ZOU ET AL. discloses the claimed invention including sleeve 256 formed of shrink tubing/polymer (Column 9, Line 13), but does not specifically disclose a sleeve made of a fluoropolymer tube. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a fluoropolymer enclosure, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Moreover, Applicant has not disclosed that a fluoropolymer enclosure solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the reflectors disclosed in ZOU.

10. Claims 12 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649). ZOU ET AL. discloses the claimed invention including sleeve (256), but does not specifically disclose a sleeve having an index of refraction of claimed or a waveguide made of acrylic. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a sleeve with the index of refraction as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Moreover, given that the sleeve and waveguide are both transparent, as previously disclosed, it is reasonable to assume that for efficiency purposes, both

elements could be constructed of the same material, thus having equal indexes of refraction.

11. Claims 13, 19, 36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of YU ET AL. (US 6,979,112). ZOU ET AL. discloses the claimed invention including a waveguide (316), but does not specifically disclose an acrylic waveguide or a waveguide having grooves. However, YU teaches a transparent, acrylic waveguide with a plurality of concave surfaces/grooves to provide a light incident surface that facilitates the entry of light into the waveguide (Column 3, Lines 20-35). It would have been to one having ordinary skill in the art at the time the invention was made to make the waveguide of acrylic and with grooves for purposes of obtaining the well known advantages of acrylic, e.g. transparent material with high glass transition temperature, and grooves, e.g. more efficient use of light.

12. Claims 16 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649). ZOU ET AL. discloses the claimed invention including a old-cathode fluorescent light source (252, Fig. 8, Column 14, Line 62), but does not specifically disclose a removable light source. However, it would have been to one having ordinary skill in the art at the time the invention was made to make the light source removable for purposes of maintenance and replacement in addition to the fact

that it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

13. Claims 21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of applicant's admitted prior art. ZOU ET AL. discloses the claimed invention as cited above, but does not specifically disclose a waveguide, light source and sleeve formed as a self-contained unit capable of removable insertion into a display structure/picture frame. However, applicant admits that such use is known in the art (Page 1, Lines 23-24) for the purpose of enhancing the display of graphical or visual information (Page 1 Lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the waveguide, light source and sleeve of ZOU ET AL. into a self-contained unit capable of removable insertion into a display structure/picture frame as taught by applicant's admitted prior art in order to enhance the display of graphical or visual information.

14. Claims 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of ATO (US 6,935,766). ZOU ET AL. discloses a planar waveguide system for emitting light with reduced loss (300, Fig. 9 illustrates a waveguide that reduces light loss) having:

- A cold-cathode fluorescent light source (252, Fig. 8, Column 14, Line 62);
- A transparent, acrylic/dielectric insulating sleeve surrounding the light source (256, Column 8, Lines 40-43);

- A planar waveguide having an edge in contact with/adjacent to the sleeve and receiving light through [a gap in] the sleeve, the planar waveguide receiving the light through an incident edge and emitting the received light through a planar surface (316, Fig. 9; Column 9, Lines 48-54); and
- A reflector surrounding a substantial portion of the sleeve and directing light into one edge of the guide (258 illustrates a reflector surrounding the inside surface of sleeve 256) with the reflector made of a specular/porous thin polymer film or PTFE sheet and enabling contact between the light source and sleeve (Fig. 9; Column 5, Line 51-Column 6, Line 5).

15. ZOU ET AL. discloses the claimed invention, but does not specifically disclose means for coupling said reflector/insulating sleeve adjacent to the waveguide edge. However, ATO teaches a double-sided adhesive tape for coupling a reflector and light guide (Column 4, Lines 56-59). It would have been obvious to one of ordinary skill in the art at the time of invention to modify ZOU ET AL. and use the adhesive tape as taught by ATO in order to couple the reflector/insulating sleeve (as a unit) and the light guide.

16. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) in view of ATO (US 6,935,766) as applied to claim 44. ZOU ET AL. and ATO disclose the claimed invention including sleeve (256), but do not specifically disclose a sleeve having an index of refraction of claimed or a waveguide made of acrylic. However, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to construct a sleeve with the index of refraction as claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Moreover, given that the sleeve and waveguide are both transparent, as previously disclosed, it is reasonable to assume that for efficiency purposes, both elements could be constructed of the same material, thus having equal indexes of refraction.

17. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZOU ET AL. (US 6,186,649) and ATO (US 6,935,766) as applied to claim 44. ZOU ET AL. in view of ATO disclose the claimed invention including sleeve 256 formed of shrink tubing/polymer (Column 9, Line 13), but does not specifically disclose a sleeve made of a fluoropolymer tube. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a fluoropolymer enclosure, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Moreover, Applicant has not disclosed that a fluoropolymer enclosure solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the reflectors disclosed in ZOU ET AL..

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. TSUJI (US 6,741,301) discloses a reflector bonded to a waveguide.

19. SAIGO ET AL. (US 5,926,033) discloses a waveguide having a grooved-incidence surface and a plurality of light reflecting regions.

20. RATTIGAN ET AL. (US 5,036,436) discloses a sleeve.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACR 2/15/2006

Thomas M. Sisley

Primary Examiner